

## **REMARKS**

Applicants have now had the opportunity to carefully consider the Examiner's comments as set forth in the Office Action mailed January 9, 2008. Reconsideration and re-examination of application is respectfully requested.

### **The Office Action**

The Examiner rejected claims 2, 4, 5, 7, 10 and 16-20 in the application. Claims 2, 4, 10 and 16 are rejected under 35 U.S.C. §102(e) as being anticipated by Chuang (U.S. Application No. 2005/0054296). Claims 7 and 17-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chuang. The Examiner is silent as to claim 5, and its basis for rejection. Claims 2, 4, 10, 11, 15 and 16 were also rejected on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claim 6, 7, 9-11, 16 and 17 of U.S. Patent No. 6,915,477. Finally, claims 3, 6, 8, 9 and 11-15 were objected to as being dependent upon a rejected base claim. However, Examiner noted that these claims would be allowable if rewritten in independent form, including all of the language of the base claim and any intervening claims. The Applicant thanks the Examiner for the indication of allowable subject matter.

### **The Subject Disclosure**

By way of review, the claimed disclosure is a method for adaptive quality control loop for link rate adaptation based on modulation and/or coding schemes and one or more spreading codes that adaptively select channel condition thresholds in real time. This application enables optimal channel threshold selection without measuring all of the factors that effect the channel condition thresholds. This adaptive quality loop involves adjusting channel condition thresholds with a variable up and down steps based on target quality metrics along with measurements such as error detection results, relative frequency of visiting modulation and/or coding schemes and transmitting data rates. The quality metrics can include block error rates and/or bit error rate target criteria. The first threshold in the claimed method is based on a first modulation coding scheme level used in the first data packet transmission.

## **The Cited Art**

The Examiner's primary reference is Chuang. Chuang is directed towards a link adaptation and wireless network for throughput maximization under retransmission. Chuang teaches implementing a method and system for dramatically adapting the modulation and coding schemes for radio links in a wireless communication network based on retransmission environment models. Chuang incorporates a redefined calculus and methodology for deriving the link adaptation thresholds in a retransmission environment. In particular, Chuang teaches that the first threshold value for link adaptation system uses a retransmission model that can be derived from the no-transmission model threshold. The retransmission thresholds are obtained by shifting the throughput characteristic curves of the no-retransmission model by an amount relating to the difference between the signal to interference ratio generated by the base offer traffic. The base offer traffic is generally the minimal level of stable transmissions.

## **Independent Claim 2 is not anticipated by Chuang**

Independent claim 2 states that the first channel condition threshold is based on a first modulation and coding scheme level used in the first data packet transmission. Chuang does not teach or disclose this feature. Chuang explicitly states that the first threshold value for a link adaption system uses a retransmission model that can be derived from a no-transmission model threshold. Chuang goes on to state that the retransmission thresholds are obtained by shifting the throughput characteristic curves for the no-transmission model by an amount relating to the difference between the signal to interference ratio generated by the base offer traffic  $SIR_0$ . The resulting signal to interference ratio is generated due to the base traffic plus retransmission. The no-transmission threshold is generally defined as the threshold which produces system instability such that excessive retransmission results cause unbound delay and almost 0 throughput at the receiver. This is patentably distinct from the first channel condition threshold being based on the first modulation and coding scheme level used in the first data packet transmission, as recited in independent claim 2.

## **Double Patenting Rejection**

Claim 2 is patentably distinct from claims 6, 7, 9-11, 16 and 17 of U.S. Patent No. 6,915,477. These claims include many other differences besides a first variable step and a first variable size step as Examiner has noted. One major example is that, in the '477 patent, the error detection result associated with the transmission of the first data packet is suggested if the first data packet belongs to a first category. In contrast, claim 2 of the instant application does not divide the data packets into categories and adjusts the first channel condition threshold based on the MSC level used in the first data packet transmission. Another difference involves when the first data packet belongs to a second category, the first channel condition threshold is adjusted according to the last error detection result in the '477 patent. As stated above, because these data packets are not divided into categories in the instant application a patentable difference exists through the steps of the methods. Therefore, the claims of the '477 patent in the instant application are patentably distinct from one another. The variable size step and variable step are not the only differences between the two claims of the '477 patent and the instant application. Therefore, it is respectfully requested that the double patenting rejection to claim 2 be withdrawn.

## **Dependent claims**

All claims in the application are either directly or indirectly dependent from claim 2. Because the rejections of claim 2 should be withdrawn, it is hereby submitted that all claims remaining in the application are allowable. Claim 5, in particular, was not addressed in the Office Action. Because the Examiner has the burden of showing that the claimed features are not patentable, the rejection to claim 5, in particular, should be withdrawn.

Furthermore, claim 18, the Examiner suggests that transmitting a second data packet using a second MSC level is inherent in Chuang. However, the Examiner has failed to submit any evidence supporting this assertion. Therefore, the rejection to claim 18 should also be withdrawn.

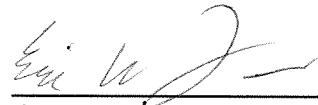
## **CONCLUSION**

For the reasons detailed above, it is respectfully submitted all claims remaining in the application (claims 2-20) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to telephone Joseph D. Dreher, at (216) 861-5582.

Respectfully submitted,

FAY SHARPE LLP



April 9, 2008

Date

Joseph D. Dreher, Reg. No. 37,123

Eric W. Lee, Reg. No. 58,857

1100 Superior Avenue, Seventh Floor

Cleveland, OH 44114-2579

216-861-5582

CERTIFICATE OF ELECTRONIC TRANSMISSION	
I hereby certify that this correspondence (and any item referred to herein as being attached or enclosed) is (are) being transmitted to the USPTO by electronic transmission via EFS-Web on the date indicated below.	
April 9, 2008	
Date	By: Georgeen B. Sonntag

N:\LUTZ\200551\GBS0002868V001.docx